REMARKS

Claims 1-12 are pending in this application. Claims 2, 3 and 6-9 are canceled without prejudice or disclaimer, and claims 1, 4, 5 and 10 are amended herein. Upon entry of this amendment, claims 1, 4, 5 and 10-12 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendment to claim 1 may be found in original claims 2, 8 and 9, and in the disclosure in the specification on page 11, lines 2-6, page 19, lines 23-25, page 20 lines 1-2, page 20, lines 13-18, and page 21, lines 10-12.

Claims 1-12 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. (Office action paragraph no. 2)

Reconsideration of the rejection is respectfully requested.

The Examiner states that claim 3 and page 4, lines 16-23, and page 7, lines 15-22, imply that only photocurable or only thermosetting groups need to be present in component (A) of claim 3. The Examiner states that "it would appear that both types of groups are necessary in component (A)."

Applicant first notes that this rejection is not clearly stated, in that the Examiner does not state that the specification does not disclose how to perform the method of the invention. Moreover,

Applicant submits that claim 1 does **not** recite that only photocurable or only thermosetting groups are present in the coating film. Claim 1 recites coating with "a thermosetting and photocurable clear coating composition ...." The content of original claim 2 also required a "themosetting and photocurable resin component."

The Examiner refers to original claim 3 as implying that only photocurable groups or only thermosetting groups need to be present. However, the content of original claim 3, now incorporated into claim 1, requires "a resin containing one or more radical-polymerizable unsaturated groups **and** one or more thermosetting functional groups per molecule (A)" (emphasis added).

The Examiner refers to the citation at page 4, lines 16-23, which is "item 3," corresponding to original claim 3. This also does not state that only a thermosetting or only a photocurable group is present.

The Examiner refers to the citation at page 7, lines 15-22, which specifically refers to "the thermosetting and photocurable resin component (A). " This again implies that both thermosetting and photocurable groups are present.

Applicant therefore submits that the original claims and the presently amended claims are fully enabled by the specification.

Claim 8 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office action paragraph no. 4)

The rejection is moot in view of the cancellation of claim 8 without prejudice or disclaimer. Applicant notes that claim 1, as amended, does not recite "repairing" as in original claim 8, but recites "grinding and polishing the semicured coating film," as supported by the disclosure of the specification at page 20, lines 11-21.

Claims 1-3 and 9-12 are rejected under 35 U.S.C. §102(b) as being clearly anticipated by WO 00/58027. (Office action paragraph no. 6)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims.

The Examiner refers to the abstract of WO 00/58027 (equivalent to US 6,506,458), hereinafter Blatter, which discloses that a varnish coating is applied and then cured, and that the substrate is optionally subjected to an air ventilation phase after application of the varnish, and then cured by NIR radiation in the wavelength range of 760 to 1500 nm.

Claim 1, as amended, now requires irradiating with light "having a wavelength of 200 to 450 nm," outside the range in Blatter.

In addition, claim 1, as amended, requires "grinding and polishing the semicured coating film." There is no disclosure of this in Blatter.

Moreover, the Blatter reference does **not** appear to disclose a heating step followed by a separate irradiating step. It appears that the only curing step is the NIR irradiation. This can be seen in the summary of the invention at column 1, lines 53-62, of Blatter. Blatter does discloses an

optional "drying" step before the curing step, and that the drying step may involve blasting with air at temperature 10 to 80 °C, preferably at room temperature. However, in claim 1, as amended, the heating step is 70°C to 160°C for 10 to 20 minutes.

The claims, as amended, are therefore not anticipated by Blatter.

Claims 1 and 9-12 are rejected under 35 U.S.C. §102 (b) as being clearly anticipated by JP 05-123643. (Office action paragraph no. 7)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims.

In particular, claim 1, as amended, recites "grinding and polishing the semicured coating film." There is no disclosure of this in JP 05-123643.

The claims, as amended, are therefore not anticipated by JP 05-123643.

Claims 1-3, 6 and 9-12 are rejected under 35 U.S.C. §102 (b) as being clearly anticipated by Tyger et al. (U.S. Patent No. 5,106,651). (Office action paragraph no. 8)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims.

In particular, claim 1, as amended, recites "grinding and polishing the semicured coating film." There is no disclosure of this in Tyger et al.

The claims, as amended, are therefore not anticipated by Tyger et al.

Claims 4-5 and 7-8 are rejected under 35 U.S.C. §103 (a) as being unpatentable over WO 00/58027. (Office action paragraph no. 10)

Reconsideration of the rejection of pending claims 4 and 5 is respectfully requested in view of the amendments to the claims.

As noted above, claim 1, as amended, recites several limitations not found in Blatter. In particular, there is no disclosure or suggestion in Blatter for the step of "grinding and polishing the semicured coating film."

The claims, as amended, are therefore not obvious over Blatter.

Claims 4-8 are rejected under 35 U.S.C. §103 (a) as being unpatentable over Tyger et al. (U.S. Patent No. 5,106,651). (Office action paragraph no. 11)

Reconsideration of the rejection of pending claims 4 and 5 is respectfully requested in view of the amendments to the claims.

As noted above, Tyger et al. does not disclose "grinding and polishing the semicured coating film." With regard to the related recitation of original claim 8 regarding "repairing," the Examiner broadly states that it would have been obvious to repair defects between steps.

Applicant respectfully disagrees, as the Examiner has not demonstrated any suggestion or motivation for this in the general art. In fact, Tyger et al. specifically indicates that the heat curing is essentially complete ("fully heat cured," column 2, line 62), and that the UV irradiation step is **specifically** to improve resistance to water-spotting and acid etching (column 2, lines 8-14). This

is clearly an effect on the outer surface, and interfering with the outer surface by grinding and polishing, as required by amended claim 1, would probably be expected by one of skill in the art to **interfere** with the resistance effect. That is, there would not have been a reasonable expectation of success.

In addition, Applicant submits that there are unexpected results commensurate in scope with the present claims. In support of this, Applicant here submits a Declaration under 37 CFR 1.132 by Yoshizumi MATSUNO. As shown in the Experiments of the attached Declaration, the effects of the present invention, in particular, good surface smoothness and pencil hardness cannot be obtained when the heating temperature and dosage of ultraviolet light are outside of the ranges recited in the amended Claim 1.

Specifically, the Declaration compares inventive Example 3 of the present specification to new Experiments 1-4 as comparative examples. In these experiments, the test sheet of Production Example 15 of the specification was coated with coating composition no. 3, and was subjected to varying conditions of heating (i.e., step (ii) of claim 1) and irradiating (i.e., step (iii) of claim 1). As can be seen, only inventive Example 3 meets the heating and irradiating limitations of claim 1. It can be seen in Table I of the Declaration (page 3) that only inventive Example 3 has surface smoothness A (almost as glossy as before the test; see specification, page 41), while the comparative Experiments 1-4 all have surface smoothness B (less glossy).

The comparative Experiments are clearly inferior to the inventive, and Applicant submits that this result is clearly unexpected over the cited reference.

Accordingly, the method of the present invention exhibits the following remarkable effects, as described on pages 42-43 of the instant specification:

(1) As in the conventional method of forming a coating film by heat-curing alone, the present method can form a cured coating film having excellent adhesion, finish quality, weatherability, etc.

(2) Because the present method can drastically shorten the time required for heating on an automobile body-coating line, the length of a drying furnace line, for example, can be reduced to about half the length usually required. Thus, space and energy can be saved.

(3) When a coating film needs to be repaired, dust or other foreign matter adhering to the film surface can be easily removed, and subsequent polishing of the film is also easy.

(4) Therefore, especially when forming a coating film on the bodies of vehicles such as automobiles, motorcycles, container vehicles and the like, the present method can increase productivity and reduce costs.

Tyger et al. does not disclose the conditions described in steps (i) and (iii) of the present claims, or the remarkable effects (1) to (4) described above. The pending claims are therefore not obvious over Tyger et al.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

KRATZ, QUINTOS & HANSON, LLP

Daniel A. Geselowitz, Ph.D.
Agent for Applicants
Reg. No. 42,573

DAG/xl

Atty. Docket No. **040291**
Suite 400
1420 K Street, N.W.
Washington, D.C. 20005
(202) 659-2930

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Enclosures: Petition for Extension of Time
Declaration under 37 CFR 1.132 by Yoshizumi MATSUNO

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